OCCURRENCE OF CTX-M GENE IN CLINICAL ISOLATES OF *PROTEUS* SPECIES IN A TERTIARY CARE CENTER

ABSTRACT

BACKGROUND

The antibiotic resistance among *Proteus* infections occur due to the frequent and inappropriate use of antibiotics . The most common resistance mechanism related with β-lactams is the production of β-Lactamases. Among the new ESBL families CTX -M is emerging as the commonest gene. Plasmids encoding for ESBL enzymes also carry co-resistance genes for other non β–lactam antibiotics, limiting the number of drugs against this bacteria.

MATERIALS AND METHODS:

In Tirunelveli Medical College, a total of 100 *Proteus* isolates were screened for ESBL production with 3rd generation Cephalosporins and the resistant isolates were confirmed with phenotypic tests Combined disc test, Double disc synergy test and ESBL E test. Then Real-Time PCR was done to identify the presence of blaCTX-M gene .The antimicrobial susceptibility patterns of *Proteus* isolates and the risk factors for ESBL production among those isolates were analysed.

RESULTS :

Among the 53% of ESBL producers among *Proteus* species,90.5% were found to have blaCTX –M gene by PCR .98% of ESBL producing *Proteus* were sensitive to Piperacillin/Tazobactum and Imipenem . The CDT is the simple, cost effective method in

the detection of the ESBL. Prior exposure to Cephalosporins and Catheterisation among them were found statistically significant among these patients.

CONCLUSION:

Treatment failure, morbidity and mortality are more likely to occur in patients infected with ESBLs producing *Proteus* thereby rising the medical and surgical care costs. so the various resistance genes needs for a regular review of its sensitivity pattern .

Keywords: Proteus species, ESBL, CTX-M gene.